Reminder: Invitation to review a manuscript for SN Computer Science - SNCS-D-25-03568R1 - [EMID:c0ead857dfeb61d4]

Expéditeur : SN Computer Science - Editorial Office (em@editorialmanager.com)

À : k.alahassa123@yahoo.fr

Date : samedi 6 juin 2026 à 05:40 UTC−4

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SNCS-D-25-03568R1
Original Research
MaxTransResNet: A Residual 3D Registration Network with MaxPooling and Transposed Convolutions for Lung CT Alignment
SN Computer Science

Dear Dr. ALAHASSA,

On 04 Jun 2026 we sent you the invitation to review the above submission. Please could you accept or decline the invitation as soon as possible, by clicking on the link?

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Editorial Office
SN Computer Science

SNCS-D-25-03568R1
Original Research
MaxTransResNet: A Residual 3D Registration Network with MaxPooling and Transposed Convolutions for Lung CT Alignment
SN Computer Science

Abstract:
Intra subject 3D medical image registration plays a vital role in capturing temporal anatomical changes, particularly within dynamic organs such as the lungs. However, challenges such as large respiratory-induced deformations and the need for fine-grained anatomical correspondence complicate accurate alignment. In this paper, we propose a robust and

efficient deep learning-based registration framework tailored for the NLST task of the Learn2Reg 2023 challenge, which targets inspiration-expiration CT lung scan alignment. Our approach leverages a customized SegResNet backbone to predict dense displacement fields (DDFs) that enable voxel-level registration. The network is trained in a weakly supervised manner using a composite loss that integrates Dice similarity for lung mask overlap and Target Registration Error (TRE) for anatomical keypoint correspondence, ensuring both global structural and local landmark fidelity. Additionally, the use of CacheDataset enables efficient
data loading, while the flexible multi-loss design facilitates modular adaptation. These results highlight the potential of our solution for clinical applications requiring precise intra subject lung registration, such as tumor progression tracking and respiratory motion modeling.

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